

Crystal-Face Site Survey Report

The Crystal-Face (C-F) site survey was performed during the week Oct 29 - Nov 2, 2001. The objective: to find a location to base the Mission Operations & 2 Ground Observation / Validation sites for the mission. The map below shows the area of general scientific interest for the mission.



Preface:

Initially information was gathered via the internet on over 20 military bases and airports in the southern Florida region. Aircraft operating in C-F include the NASA ER-2, NASA WB-57, Proteus, NRL P-3, Cirpass Twin Otter, and UND Citation aircraft. The highlighted marks on the map show the locations of actual sites visited during this survey. In the event all aircraft could not be based together, the primary ground site would incorporate the possibility of housing the smaller aircraft with smaller flight durations.

NASA Earth Science missions have been performed in Florida from Eglin AFB (Ft. Walton), Tyndall AFB (Panama City), JAX NAS (Jacksonville), and Patrick AFB (NASA Kennedy). CAMEX-3 (1998) and CAMEX-4 (2001) were based from Patrick AFB and JAX NAS respectfully. Patrick AFB will demolish their hangar and JAX NAS cannot accommodate all 6 aircraft needed for a well-coordinated study. A request letter for the transient hangar at JAX NAS has been submitted, however, the WB-57's 124' wingspan cannot be accommodated inside the hangar which has only 100' openings. The WB-57 has operated from Key West NAS years earlier and it is the only site that could possibly accommodate all the 6 aircraft. Key West NAS is located about 125 miles from the prime interest whereas JAX NAS is approximately 275 miles away. The ground sites will house multiple radars, lidars, radiometers, and possibly the smaller aircraft.

Participants on the survey included:

Key West (Mission Operations)

Mike Craig, ARC, Project Office
Steve Hipskind, ARC, Project Office
Mike Kapitzke, DFRC, ER-2
Ken Broda, DFRC, ER-2
Bud Meins, JSC, WB-57
Shelly Hilden, JSC, WB-57

Scientific area of interest (Ground Observations)

Mike Craig, ARC, Project Office
Steve Hipskind, ARC, Project Office
Jim Mather, PNL, Ground Bases

Main base of operations

Site to accommodate aircraft, and the majority of the investigators (both instrument and theory)

NAS Key West – Boca Chica Key (U.S. Navy)

Location:

6 miles N of Key West on Boca Chica.



Runway:

Length: 10000	Width: 150	Surface: ASPH-G
Length: 7000	Width: 150	Surface: ASPH-G
Length: 7000	Width: 150	Surface: ASPH-G

Manager:

Lt. Kenneth Keane
(305) 293-2516
keaneke@naskw.navy.mil

Key West Comments:

Whenever operating from a military location government R&D projects do take a higher priority than, for example, general military training detachments but any national emergency exercises will be the highest priority. KWNAS mainly serves as a Navy flight training facility and is expected to host some squadrons during the time of C-F.

The transient hangar there is an old bomber type hangar, approximately 400' wide and 150' deep. This hangar will be starting a complete remodeling in the May timeframe and will be only in the midst of the remodeling during C-F. The hangar is basically broken into three sections, A, B, and C. Section A is expected to be where remodeling will take place. Labs will be unavailable and hangar space will most likely be occupied by construction equipment in this section. Section B is expected to house any squadron in place at KWNAS (squadrons are on the calendar already). Hangar floor space is needed only if the squadron needs to make repairs to aircraft, otherwise our aircraft can expand into that space. Labs will be used for squadron flight briefings and maintenance shops. It may be possible that we can share some large space in section B on the first floor. Section C is reserved for C-F from July 1st – August 15th 2002.

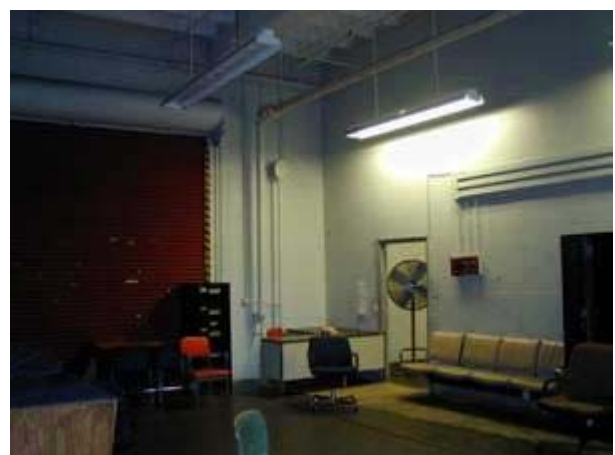
The hangar is of 1950 vintage and is in clear need of remodeling. There is enough room for housing the ER-2, WB-57, & Proteus. Other aircraft may be difficult to fit into the hangar, except for the Citation which may fit between the wings of the ER-2 / WB-57. A layout will show the possibility to accommodate the other aircraft in the hangar. There is plenty of ramp space for the remaining aircraft.

The labs on the first floor are equipped with roll-up doors which will be good for instruments. However, lab space will be very tight for the overall experiment. Additional phones, wide area, and local area networks will have to be installed. There is a large parking lot behind the hangar for parking all the rental cars. This may also be a good place to park several double wide trailers for investigators, which would relieve the tight space in the hangar. There may be issues about trailers in the Keys or on the base because of hurricanes.

Operationally the ER-2 and WB-57 can both operate there with only minor problems. There are three runways all in different directions, reducing the potential for crosswind cancellations with the aircraft. The tower is open 7 days a week from 7am – 10pm. Taxiways make turning difficult for the ER-2 but it can be done without modifications.

There are over 900 BOQ rooms either on base or very close to downtown Key West. Prices ranged from \$26 to \$50. All rooms are equipped with a refrigerator and a microwave. A group reservation is required which means we will be responsible for managing the rooms. One BOQ has a conference room that can hold ~80 people. This may suit well for morning mission briefings compensating for the lack of meeting space at the hangar.

Key West Naval Air Station:



Primary Ground site (w/ possible smaller aircraft)

Fort Myers (FMY) Page Field

Location:

3 miles S of Fort Myers

LAT: 26-35-11.800N - LON: 081-51-47.700W



Runway:

Length: 6406 Width: 150 Surface: ASPH-G

Manager:

Coleen Baker

501 Danley Dr

Fort Meyers, FL 33907

(941) 936-1443

Fort Meyers Comments:

Fort Meyers is a general aviation airport (the only one with precision approaches in the region). Airport managers were very enthusiastic and accommodating. There will be very low aircraft activity during the C-F time period. Lots of open space for ground site instruments is available but getting electrical service across the taxiways could pose a problem. Equipping the radar operations for generator power will reduce many location limitations. The only hangar possibly available was an open hangar with no office space available nearby. Renting a trailer for office space is an option. Later discussions revealed that the hangar dimensions will not accommodate the Twin Otter. Daylight storms originate from the south east but are very short lived over airport. Evening storms are generally from the west.

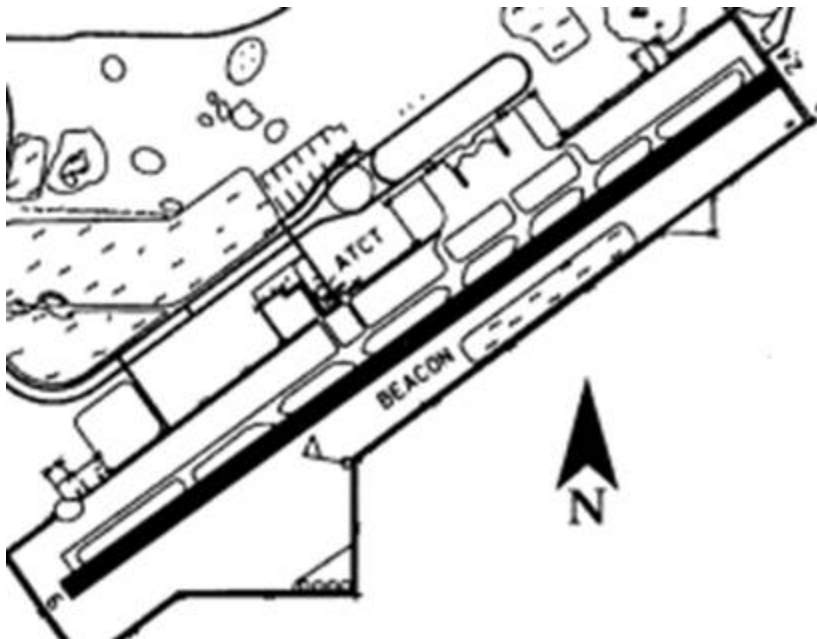


Southwest Florida Int'l

Location:

10 mi. SE of Ft Myers

LAT: 26-32-10.200N - LON: 081-45-18.600W



Runway:

Length: 12000 Width: 150 Surface: ASPH-G

Remarks:

Manager:

Robert M Ball

16000 Chamberlin Parkway SE

Fort Myers, FL 33913

941-768-4700

Southwest Comments:

Southwest International, like any commercial airport, is not suggested for operations. Security is at maximum limit and full background checks of all visitors will be required. This will also eliminate any chance for foreign nationals participating. The majority of the space on inland airports has a tendency to get flooded. Lots of standing water was present during the survey. Storms here are generally longer lived with days of constant drizzle.

Naples Muni (APF)

Location:

2 mi. NE of Naples

LAT: 26-09-09.967N - LON: 081-46-30.457W



Runway:

Length: 5000 Width: 150 Surface: ASPH-G

Length: 5000 Width: 100 Surface: ASPH-G

Manager:

Theodore D. Soliday

160 Aviation Dr North

Naples, FL 34104

941-643-0733

Naples Comments:

The airport is somewhat smaller than the Fort Meyers airport but generally busier with commercial air traffic on one side of the field. A good hangar is available with office spaces inside. There are several options for radar sites including one on the aircraft parking ramp. Runway length will restrict the Citation aircraft to a slightly shorter flight (~ -40 min.) The community is concerned about airport noise and issues. NASA publicity could provide leverage for cheaper rates.



Marco Island (MKY)

Location:

4 mi. NE of Naples

LAT: 25-59-42.100N - LON: 081-40-21.100W



Runway:

Length: 5000 Width: 100 Surface: ASPH-P

Manager:

Bob Tweedie
2003 Mainsail Drive
Naples, FL 34114
941-394-3355

Marco Island Comments:

This is a much smaller airport than the previous ones, however the low ground cover may make it an excellent ground site. The space near the end of runway is the best possibility. FAA guidelines may restrict sites along the sides of the runway. A small amount of power may be available near the end of runway site. It is an excellent site for a single radar but with multiple radars keeping them separated may be problematic.



Everglades Airpark (XO1)

Location:

1 mi. SW of Everglades City

LAT: 25-50-55.362N - LON: 081-23-24.286W



Runway:

15/33 Length: 2400 Width: 50 Surface: ASPH-G

Manager:

Dave Blalock

650 E.C. Airpark Rd

Everglades City, FL 34139-0689

941-695-2778

Everglade Airpark Comments:

The airpark was closed when we arrived around 6:00pm. The runway here is too short (2400') for basing any C-F aircraft, however, it could be a possible ground site. The runway is close to the water's edge and it may not be possible to set up ground sites on the water side; the other side has a nice area for ground radars. Some trees that border the fence in the area may somewhat impede the eastern view but from outside the airport it was not possible to closely examine this. We experienced hundreds of mosquitoes performing touch and go's (with the occasional bite) at the airport.

Everglades City was very small: one motel and maybe a couple of restaurants. Ground site personnel would probably prefer to stay on Marco Island although the dark drive could be hazardous after long days. The closest hardware and electronic stores would probably be in Naples about 30 miles away.

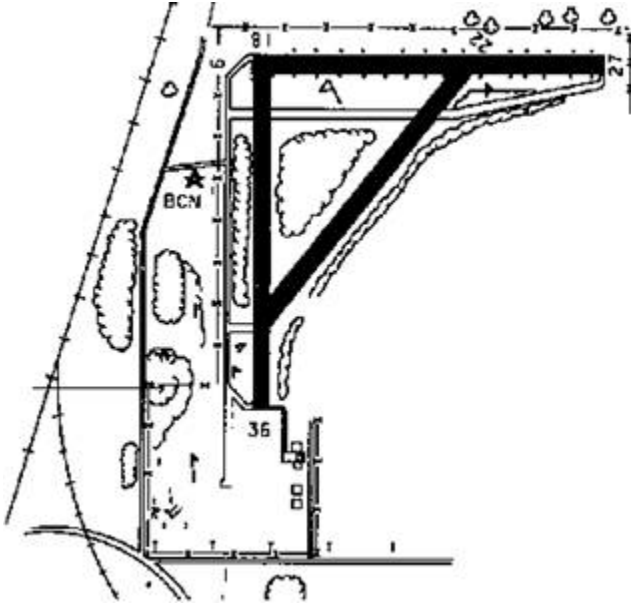


Immokalee Airport (IMM)

Location:

1 mi. NE of city

LAT: 26-25-59.400N - LON: 081-24-03.700W



Runway:

Length: 5000 Width: 150 Surface: ASPH-G

Length: 5000 Width: 150 Surface: ASPH-G

Manager:

John Kishner

165 Airpark Blvd

Immokalee, FL 34142

941-657-9003

Collier County

2003 Mainsail Drive

Naples, FL 34114

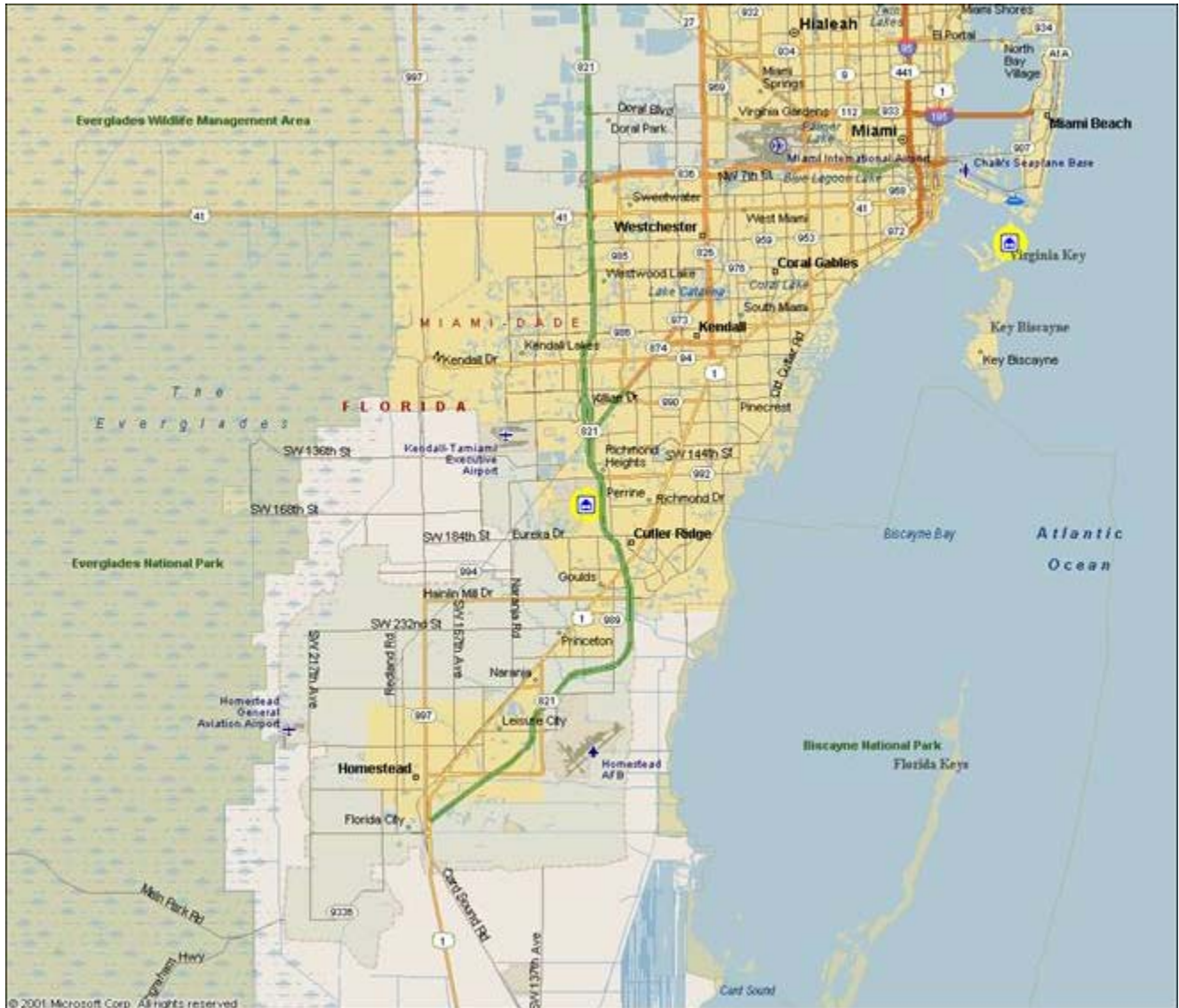
941-642-7878

Comments:

We spoke to the manager of Immokalee airport at Marco Island. Although hangars are available the airport is inland in the area where heavy convection forms. Many days of constant rain are experienced and floods around the airport are frequent.

Secondary Ground Site

Highlighted areas show the sites that were visited.



University of Miami (Virginia Key)

Comments:

Bruce Albrecht showed us multiple possible sites on the meteorology department campus that would work for a second ground site. All sites were small but with the possibility of electrical and internet nearby. Bruce's radar is fairly mobile and can easily be moved to alternate sites as required. Bruce mentioned that his experience shows that cirrus measurements would probably be more successful a few miles inland.

The university recently acquired an old U.S Navy site in the Richmond Heights district of Miami. This is a secure area with power, lab space, and internet available. Security is a concern in the area. Some trees may impede the view in certain directions. An 85' dish to be used for Antarctic communications will also restrict the view somewhat. The university has plans for installing a X-band radar in the near future. Overall it would be a very good second site, especially for non-scanning instruments. We noticed a very large open area at the Coast Guard site in the adjacent area that might work well for scanning instruments that need near horizon to horizon views.

Richmond Site



